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IUPAC Secretariat, Bank Court Chambers, 2–3 Pound Way, Templars Square, Cowley, Oxford OX4 3YF (UK)
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A. Liu, F. Kohler, L. Karrer, J. Gaube and P. Spellucci	1441	A model for the excess properties of 1-alkanol + alkane mixtures containing chemical and physical terms
C. G. Panayiotou	1453	Applications of the LFAS theory to VLE and volumetric properties in 1-alkanol + n-alkane mixtures

IUPAC Recommendations on Nomenclature and Symbols and Technical Reports from Commissions

Commission on High Temperatures and Refractory Materials (J. P. Coutures and M. H. Rand)	1461	Melting temperatures of refractory oxides — Part II: Lanthanoid sesquioxides
Commission on Radiochemistry and Nuclear Techniques (N. E. Holden)	1483	Total and spontaneous fission half-lives for uranium, plutonium, americium and curium nuclides
Commission on Radiochemistry and Nuclear Techniques (N. E. Holden and K. A. Holden)	1505	Re-examination of 2200 metre/second cross section experiments for neutron capture and fission standards
Commission on Water Chemistry (A. J. Dobbs)	1511	Concentration units in water chemistry

SEPTEMBER

Invited main lectures presented at the Thirteenth International Symposium on Macrocyclic Chemistry held in Hamburg, FRG: 4–8 September 1988

A. Knöchel	iv	Preface
J. Rebek, Jr.	1517	Model studies in recognition using new molecular shapes
S. B. Ferguson, E. M. Seward, E. M. Sanford, M. Hester, M. Uyeki and F. Diederich	1523	Molecular recognition by cyclophane hosts
A. Shanzer, J. Libman, R. Lazar and Y. Tor	1529	Receptor mapping with artificial siderophores
F. P. Schmidtchen, A. Gleich and A. Schummer	1535	Selective molecular hosts for anions
I. O. Sutherland	1547	Molecular recognition by synthetic receptors
J. L. Dye	1555	Macrocyclic chemistry in reducing environments: From concentrated metal solutions to crystalline electrides
D. E. Fenton	1563	Metal-ion recognition: An assault on natural order
L. Fabbrizzi	1569	Design of redox systems for the transport of electrons across liquid membranes: Poly-aza-macrocyclic metal complexes
L. F. Lindoy	1575	The development of mixed donor macrocyclic systems for metal-ion discrimination
F. H. Kohnke and J. F. Stoddart	1581	The evolution of molecular belts and collars
J. Dale and S. B. Fredriksen	1587	Novel ligands designed for selective complexation of small cations
L. J. Rodriguez, M. Xu, E. M. Eyring and S. Petrucci	1593	Molecular dynamics of macrocycle–metal ion complexes involving heteronuclear binding atoms

M-J. Schwing, F. Arnaud and E. Marques 1597 Cation binding properties of alkyl calixaryl derivatives. A new family of molecular receptors

M. Takagi, K. Nakano and N. Nakashima 1605 Crown ethers as sensory materials in chemical measurements: Interfaces for chemical signal transformation

W. E. Morf, K. Seiler, B. Lehmann, C. Behringer, K. Hartman and W. Simon 1613 Carriers for chemical sensors: Design features of optical sensors (optodes) based on selective chromoionophores

J. S. Bradshaw, K. E. Krakowiak, B. J. Tarbet, R. L. Bruening, J. F. Biernat, M. Bochenska, R. M. Izatt and J. J. Christensen 1619 Silica gel-bound aza-crowns for the selective removal and concentration of metal ions

J. Simon and C. Sirlin 1625 Mesomorphic molecular materials for electronics, opto-electronics, iono-electronics: Octaalkyl-phthalocyanine derivatives

F. Montanari, S. Banfi and S. Quici 1631 Oxidations catalyzed by stable metallo-tetraaryl porphyrins under aqueous-organic two-phase conditions

D. Parker, J. R. Morphy, K. Jankowski and J. Cox 1637 Implementation of macrocycle conjugated antibodies for tumour-targetting

IUPAC Recommendations on Nomenclature and Symbols and Technical Reports from Commissions

Commission on Microchemical Techniques and Trace Analysis (A. Townshend and E. Jackwerth) 1643 Precipitation of major constituents for trace preconcentration: Potential and problems

Commissions on Analytical Nomenclature and Automation and Clinical Chemical Techniques (G. C. Guilbault and M. Hjelm) 1657 Nomenclature for automated and mechanised analysis (Recommendations 1989)

OCTOBER

Plenary and main session lectures presented at the Thirteenth International Conference on Organometallic Chemistry held in Turin, Italy: 4–9 September 1988

Plenary lectures

T. J. Marks, M. R. Gagne, S. P. Nolan, L. E. Schock, A. M. Seyam and D. Stern 1665 What can metal–ligand bonding energetics teach us about stoichiometric and catalytic organometallic chemistry?

J. Tsuji 1673 Selectivities in organic reactions via π-allylpalladium complexes

G. van Koten 1681 Tuning the reactivity of metals held in a rigid ligand environment

Main session lectures

M. A. Bennett 1695 The stabilization and reactivity of strained cyclic alkynes on transition metal centres

E. Carmona, J. Campora, M. A. Munoz, M. Paneque and M. L. Poveda	1701	Electron-rich metal complexes for CO_2 and CS_2 incorporation
M. H. Chisholm	1707	Carbon–carbon and carbon–hydrogen bond activation at ditungsten centers supported by alkoxide ligands
G. Erker	1715	Some novel structural and chemical aspects of Cp-substituted bent metallocene complexes
G. L. Geoffroy, J. B. Sheridan, S. L. Bassner and C. Kelley	1723	Migratory-insertion of carbon monoxide into metal–acyl bonds
P. Jutzi	1731	Main-group metallocenes: Recent developments
E. Keinan	1737	Silicon hydrides in organic synthesis
P. M. Maitlis	1747	A new view of the Fischer–Tropsch polymerisation reaction
I. I. Moiseev	1755	Synthesis and catalytic activity of carbonyl palladium clusters
P. H. Dixneuf	1763	Activation of alkynes with ruthenium complexes
P. S. Pregosin and C. Ammann	1771	Applications of 2-dimensional NMR in organometallic chemistry
H. Vahrenkamp	1777	New interconversions in the ligand sphere of clusters

IUPAC Recommendations on Nomenclature and Symbols and Technical Reports from Commissions

IUPAC–IUB Joint Commission on Biochemical Nomenclature (G. P. Moss)	1783	Nomenclature of steroids (Recommendations 1989)
Commission on Electroanalytical Chemistry (K. M. Kadish, Xihai Mu and J. E. Anderson)	1823	Recommended methods for the purification of solvents and tests for impurities: Benzene and toluene

NOVEMBER

Invited lectures and selected communications* presented at the International Symposium on Surface Chemistry, Adsorption and Chromatography (dedicated to the memory of A. V. Kiselev), held in Moscow, USSR: 13–17 November 1988

O. G. Larionov, L. D. Belyakova and L. N. Kolomiets	iv	Preface
K. D. Shcherbakova and Ya. I. Yashin	1829	Andrej V. Kiselev's contributions to the science of adsorption, molecular interaction and chromatography

Adsorption and Surface Chemistry

P. J. M. Carrott and K. S. W. Sing	1835	Multilayer adsorption of nitrogen and alkanes by non-porous carbons and silicas

M. M. Dubinin	1841	Fundamentals of the theory of adsorption in micropores of carbon adsorbents: characteristics of their adsorption properties and microporous structures
C. G. V. Burgess, D. H. Everett and S. Nuttall	1845	Adsorption hysteresis in porous materials
J. Lahaye and P. Ehrburger	1853	Surface chemistry of carbon: an atomistic approach
F. Rodriguez-Reinoso	1859	An overview of methods for the characterization of activated carbons
O. Kadlec	1867	The state properties of adsorbed fluids
J. Kärger, H. Pfeifer, R. Sh. Vartapetian and A. M. Voloshchuk	1875	Molecular self-diffusion in active carbons
V. A. Davankov and M. P. Tsyurupa	1881	Structure and properties of porous hypercrosslinked polystyrene sorbents 'Styrosorb'
L. D. Belyakova, N. P. Platonova, T. I. Shevchenko, F. Švec and J. Hradil	1889	Surface chemistry of methacrylate polymeric sorbents: chromatography and adsorption
S. Kondo, E. Amano and M. Kurimoto	1897	Effect of pore size of silica for the adsorption of proteins
R. M. Barrer	1903	Clay minerals as selective and shape-selective sorbents
A. P. Karnaukhov, V. B. Fenelonov and V. Yu. Gavrilov	1913	Study of the effect of surface chemistry and adsorbent texture on adsorption isotherms by comparative method
R. A. Pierotti and T. R. Rybolt	1921	The gas–solid Joule–Thomson effect
W. A. Steele and M. J. Bojan	1927	Computer simulation studies of the heats of adsorption of simple gases
J. Rouquerol, F. Rouquerol and Y. Grillet	1933	Energetical aspects of N_2 and Ar adsorption: specific adsorption, two-dimensional phase changes and adsorption in micropores
E.sz. Kováts	1937	Wetting of low energy model surfaces
A. I. Rusanov	1945	Advances in thermodynamics of solid surfaces
A. L. Myers	1949	Gravimetric measurement of adsorption from binary gas mixtures
B. V. Derjaguin	1955	Influence of surface forces on the formation of structural peculiarities of the boundary layers of liquids and boundary phases
N. V. Churaev	1959	Flow of polymolecular films
J. D. F. Ramsay	1963	Oxide gels: applications in chromatography and investigations of structure by neutron scattering
L. T. Zhuravlev	1969	Structurally bound water and surface characterization of amorphous silica
S. P. Zhdanov, T. I. Titova, L. S. Kosheleva and W. Lutz	1977	Effect of hydrothermal dealumination of a synthetic faujasite by IR spectroscopy
*A. A. Lopatkin	1981	Two thermodynamic approaches to the description of adsorption on solid surfaces
*Yu. A. Eltekov	1987	Structure of the adsorption layers of linear polymers

*V. A. Afanasev, P. I. Sarybaeva, A. S. Sultankulova and T. V. Vasilkova	1993	Cellulose sorbents obtained by the action of Lewis acids
Chromatographic Science		
F. Bruner, G. Crescentini and F. Mangani	1997	Gas–liquid–solid chromatography with coated graphitized carbon black
W. Engewald, T. Maurer and A. Schiefke	2001	Investigation of isomeric hydrocarbons by gas–solid chromatography on graphitized thermal carbon black
C. Vidal-Madjar and A. Jaulmes	2005	Determination of adsorption isotherms on graphitized carbon black by zonal gas chromatography
J. Janák	2011	Unconventional use of adsorption for enrichment of impurities in gases
N. D. Petsev, C. D. Chanev and I. C. Topalova	2015	Short columns for gas chromatography
Ya. I. Yashin	2021	Chromatographic retention parameters and molecular structure
S. N. Lanin and Yu. S. Nikitin	2027	Intermolecular interactions and selectivity of polyaromatic hydrocarbons in liquid chromatography
H. Engelhardt	2033	Chromatographic characterization of surfaces
Yu. V. Kazakevich, O. G. Larionov, and Yu. A. Eltekov	2037	Physico-chemical aspects of liquid chromatography
D. Berek and T. Macko	2041	Pressure effects in high performance liquid chromatography
W. R. Betz and W. R. Supina	2047	Use of thermally modified carbon black and carbon molecular sieve adsorbents in sampling air contaminants
K. I. Sakodynskii and L. I. Panina	2051	Effect of surface chemistry on gas-chromatographic properties of polymeric sorbents
*E. Yu. Arkhipova, E. V. Kalashnikova, R. S. Petrova and K. D. Shcherbakova	2055	A study of the structure of some cyclic molecules by chromatostructural analysis
*N. A. Katsanos, G. Karaiskakis and Ch. Vassilakos	2057	Adsorption, reaction, and desorption rate constants, measured simultaneously by gas chromatography
*M. S. Kulikov and M. S. Bobyleva	2059	Gas chromatography–mass spectrometry of the stereoisomers of N-, O- and S-containing saturated tricyclic compounds
*T. G. Andronikashvili, O. S. Banakh and V. I. Rogovik	2061	Chromatographic properties of zeolites modified for analysis of atmospheric pollutants

DECEMBER

Plenary and Invited lectures presented at the International Symposium on the Electronic Structure and Properties of Molecules and Crystals held in Dubrovnik-Cavtat, Yugoslavia: 29 August–3 September 1988

Z. B. Maksić	iv	Preface
P.-O. Löwdin	2065	On the long way from the Coulombic Hamiltonian to the electronic structure of molecules

Z. B. Maksić, K. Kovačević and M. Primorac	2075	New basis sets in quantum mechanics of molecules: Hermite-Gaussian functions
R. McWeeny	2087	Valence bond theory: A tribute to the pioneers of 1927–1935
J. M. Schulman, M. A. Miller and R. L. Disch	2103	*Ab initio* heats of formation of medium-sized hydrocarbons–10: Studies of barrelene and related compounds
D. J. Klein and N. Trinajstić	2107	Foundations of conjugated circuit models
U. Höweler, P. S. Chatterjee, K. A. Klingensmith, J. Waluk and J. Michl	2117	Electronic states and magnetic circular dichroism of cyclic π systems with antiaromatic perimeters
Z. Meić and G. Baranović	2129	Vibrational spectra of *trans*-N-benzylideneaniline and its isotopomers
T. Cvitaš, B. Kovač, Lj. Paša-Tolić, B. Ruščić, L. Klasinc, J. V. Knop, N. S. Bhacca and S. P. McGlynn	2139	Photoelectron spectra, electronic structure and long-range electronic interaction in some steroids
J. A. Dagata, L. Klasinc and S. P. McGlynn	2151	Angular momentum coupling in molecular Rydberg states
W. A. Harrison	2161	Tight-binding theory of molecules and solids
L. Pauling	2171	The nature of metals
D. Hadži	2175	Quantum chemical modeling of some biological mechanisms involving proton transfer
P.-O. Löwdin	2185	Some comments on the present situation of quantum chemistry in view of the discussions at the Dubrovnik workshop on the electronic structure of molecules

IUPAC Recommendations on Nomenclature and Symbols and Technical Reports from Commissions

Commission on Molecular Structure and Spectroscopy (H. Kon)	2195	Recommendation for EPR/ESR nomenclature and conventions for presenting experimental data in publications (Recommendations 1989)